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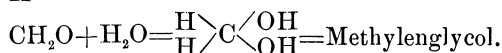
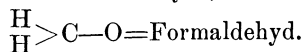
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## MICROSCOPY.

**The Proper Angle for the Razor in Paraffin Sectioning.**—

In a discussion between Dr. M. Heidenhain and Dr. B. Rawitz relative to section cutting and the staining of microscopic preparations, the latter person<sup>1</sup> upholds the advice that he gave in his "Leitfaden," and adduces experimental proof to show that the microtome knife should be placed at an acute angle to the stroke rather than at a right angle. When placed at the latter angle the sections according to their thickness, are always more or less crowded together, thus distorting the finer structures of the tissue cut. The experimental proof consists of the measurement of sections cut with the knife at a right angle, and with it at an angle of 45°. The sections were from a block of paraffin measuring  $20\frac{1}{2} \times 11\frac{1}{2}$  mm., and had a thickness of  $15\mu$ ,  $10\mu$  and  $5\mu$ . With the knife at the acute angle they all measured 11 mm. in breadth, while with the knife at a right angle they measured  $9\frac{1}{2}$  mm. for the  $15\mu$ , 9 mm. for the  $10\mu$ , and 8 mm. for the  $5\mu$  sections, thus showing a shrinkage of 2,  $2\frac{1}{2}$ , and  $3\frac{1}{2}$  mm. respectively. In the case of the thinnest sections there is a loss in breadth of almost a third of the surface of the block, and such are somewhat incorrectly denominated 'sections'. They might be called "Quetschen."—F. C. KENYON.

**Formol, not Formal.**—The paper by Bert B. Stroud in the January number of this Journal, induces me to make a few remarks regarding the nomenclature of the method of hardening by formol introduced by me into histological technique. Though I agree with the author that the terms formalin and formalose are bad and meaningless, I cannot agree to the objection to the denomination of the original fluid as "formol." To call the solution by the name of formaldehyde is not to be recommended, as formaldehyde,  $C_2H_4O$ , is a gas. The term formol is opposed by Stroud because the terminal syllable "ol" suggests an alcohol; but formaldehyde dissolved in water is no longer to be regarded as an aldehyde, but as a double alcohol, methylenglycol.



<sup>1</sup> Bemerkungen über Mikrotomschneiden und über das Färben mikroskopischer Präparate. Anat. Anz. XIII, 65-80. Separat from the author.

Another reason for naming the original fluid "formol" might be that this is the oldest name for the watery solution of formaldehyde (Trillas) and that on its introduction into microscopic and preserving technique by my father and myself it was called "formol."

The law of priority therefor supports "formol."

The term "formal" is suited only to increase confusion.

In regard to Stroud's observations which are often contradictory of those of European workers—which he seems to have overlooked—I wish to remark that the behavior of formol towards egg albumen was a long while ago thoroughly studied by me, and that in a series of publications I have demonstrated that egg or sero albumen is not only not coagulated by formol, but on the contrary is, in a sense, rendered more fluid, since a compound, methylen-albumen, is formed that never coagulates even upon the solution being heated. This non-coagulating methylen-albumen I have designated "protogen," and have described its behavior in the test tube as well as in the organism.

To avoid the bad effect of formol on some tissues, which Stroud describes, it is only necessary to employ a more concentrated solution. To the 10 per cent. (formol 1., water 9) solution originally recommended by me a small addition of alcohol may sometimes be made advantageously.—DR. F. BLUM.

**The Name of Formal.**—TO THE EDITOR.—In answer to "A Protest," on pp. 267–268 of the March, 1897, number of THE AMERICAN NATURALIST, against my use of the terms Formal, etc., as given in the January number, if "A Comparative Anatomist" will consult an elementary text-book on Organic Chemistry he will learn:

1. That there is a good precedent for applying the term *Formal* to the compound  $\text{H}-\text{CHO}$ , and the very best authority for applying the suffix *-al* to any aldehyde, *e. g.*, *Chloral*  $\text{CCl}_3\text{CHO}$ , *Trichloroacetic aldehyde*, etc.

2. That the very example he quotes disproves the point he seeks to make.

The term *acetal* is derived "from *acetic* and *aldehyde* (Foster's Encyclopædic Medical Dictionary, Vol. I, p. 22). In the article, "Chemical Nomenclature," Dictionary of Chemistry, by Henry Watts, London, 1866, Vol. IV, p. 133, this statement occurs: "*-al* abbreviation of *aldehyde*. *Ex.* Butyral=Butyric aldehyde; Valeral=Valeric aldehyde." To this it may be added that the highest authority in the world, namely, The Geneva Congress of Chemists, adopted the following: "Resolution 32. Aldehydes will be designated by the suffix *-al* (*Me-*

*thanal, Ethanal*)." (See abstract of their proceedings in *The American Chemical Journal*, Vol. 15, 1893, p. 58.) In view of the action of this Congress, the term *Methanal* would be the preferable one. But the term *Formal* is equally correct, and less likely to trouble persons already familiar with the substance.<sup>2</sup>

The writer's aim was to avoid confusion by the use of a term short, convenient, and correct; and he insists that *Formal* fulfils these requirements.

Respecting the strictly anatomic terms, "Comparative Anatomist" is referred to the article, "Neural Terms, International and National," in the last number of the *Journal of Comparative Neurology*. *Axon* was proposed in 1884 for the skeletal axis, whether a membranous tube, a cartilaginous rod, or a series of osseous vertebral centrums. *Alba* could hardly be mistaken for anything but *substantia alba*. *Tela* readily, if not inevitably, suggests the *tela vasculosa* of Huxley (*Zoological Proceedings*, 1876, p. 30), and the *tela chorioidea ventriculi* of Schwalbe's "Neurologie" (pp. 404 and 464), and the Report of the Nomenclatur Commission of the Anatomische Gesellschaft, 1895. All three terms are defined in recent English and medical dictionaries. Is not "Comparative Anatomist" needlessly magnifying his difficulties?—B. B. STROUD.

Ithaca, N. Y., March 13, 1897.

**Formol or Formalin.**—With reference to the present discussion over the proper name to be used for the 40 per cent. aqueous solution of formaldehyde, it may be said that had the author of the criticised paper that appeared in the January number looked up the chemical side of the question more carefully he would have found that there is another and much stronger reason for not using the term that he suggests than the very good one of priority, or the equally good one referring to the condition of the dissolved gas, cited by Dr. Blum. Had he read the account of formaldehyde given by Ladenburg in his "Handwörterbuch der Chemie" (Breslau, 1882), Vol. 1, on page. 195, paragraph 2, he would have found the following:

"Zu den sogen. Acetalen (Vergl., pag. 191) des Methylen-oxydes, welche als Alkoholäther der Aldehyde aufzufassen sind, gehören das Methylal oder *Formal*,  $\text{CH}_2 (\text{O. CH}_3)_2$ , Methyläther, und der Methylendiäther,  $\text{CH}_2 (\text{O. CH}_3)_2$ ." The italics are mine.—F. C. KENYON.

<sup>2</sup> As has been previously stated, (This Journal, January, 1897, p. 92) confusion has arisen from the indiscriminate use, by various writers, of the terms *Formalin*, *Formalose*, and *Formol*.

Correction—Foot note 1, p. 92, should read "—*Formal* from *Formaldehyde*, is a good scientific contraction".